2004 ANNUAL REPORT

NATIBO

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North American Technology and Industrial Base Organization (NATIBO) Calendar Year 2004 Annual Report

Background

At the 1985 Shamrock Summit, Ronald Reagan, President of the United States, and Brian Mulroney, Prime Minister of Canada, pledged to work to reduce barriers and to stimulate the two-way flow of defense goods, establish a free exchange of technology, knowledge, and skill involved in defense production. This led to the establishment of the Charter signed by the two Nations' Defense Departments on March 23, 1987. At that time the NATIBO focused on the combined capacity and capability of the defense industrial bases of the U.S. and Canada to jointly support military requirements. In 1992 the Organization determined it needed to review its objectives and explore new roles and initiatives to respond to the challenges of the 1990s. This change is reflected in more focus on technology vice industrial capacity issues. The NATIBO is now charged with ensuring a cost effective, healthy, technology and industrial base that is responsive to the national and economic security needs of the United States and Canada.

Focus/Objectives of NATIBO

- Promote the development, administration, communication, and execution of the U.S. Department of Defense and Canadian Department of National Defence technology and industrial base programs and policies.

- Foster cooperation between the Governments of the United States and Canada in development of coordinated technology and industrial base policies and programs, including policies and programs that promote the integration of the defense and commercial industrial sector and the greater use of dual use products and technologies.

- Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects involving research, development, industrial capability, and logistics programs.

- Promote the interchange of technology and industrial base data between Canada and the U.S., the military services, other government agencies, and industry.

- Promote coordination of technology and industrial base planning and insertion programs undertaken by the responsible U.S. and Canadian departments and agencies in support of their national security responsibilities.

- Facilitate enhanced joint activity through Canada/U.S. involvement in studies and implementation of resulting technology and industrial base recommendations.

- Ensure that North American technology and industrial base considerations are taken into account during U.S. or Canadian military and/or civilian emergency planning activities.

- Enhance the national security of both nations by promoting the competitiveness of the North American technology and industrial base.

- In performing the above, raise issues with relevant bi-lateral committees in those cases where interface between the NATIBO and these committees is determined to be advisable.

Memorandum of Understanding (MOU)

On May 30, 2001, the Department of Defense of the USA and the Department of National Defence for Canada entered into an agreement whereby the Defense Departments can more efficiently continue their efforts to improve the defense posture of the North American technology and industrial base. The MOU (short title NATIBO) is an umbrella document that covers research, development, technical demonstration and technology insertion activity in the two Defense Departments and "grandfathers" activity performed by NATIBO under the charter. The MOU allows three basic activities: Information Exchange, the creation of Working Groups, and formal Project Arrangements (PAs). The MOU provides a recognized framework for which funds can be transferred between the participants in support of NATIBO studies and projects.

The objectives of the MOU are to:

- Effectively leverage dollars/resources and reduce redundant efforts through bilateral cooperation on studies and projects relating to the defense technology and industrial base of the USA and Canada.
- Achieve rapid technology insertion and commercialization of emerging technologies that can be used in the manufacture and repair of military weapon systems.
- Permit a wide variety of work to be accomplished on a single project from paper studies and initial research to technology insertion efforts.

Organization

The NATIBO is co-chaired by the Director, Office of Technology Transition, for the U.S. and the Director General, International & Industry Programs, for Canada. U.S. members represent the Office of Secretary of Defense, Army, Navy, Air Force, Marines, Missile Defense Agency, Defense Logistics Agency, and Defense Contract Management Agency. Canadian representation is from the Department of National Defence. These representatives form the Steering Committee and provide strategic direction, make recommendations on proposed projects, review the progress of the organization, and act as a conduit for addressing recommendations to U.S. and Canadian authorities. Under

the provisions of the MOU, Terms of Reference (TOR) for the Steering Committee were prepared, staffed and implemented July 11, 2001. There are five observing organizations that provide assistance to the Steering Committee as appropriate. These observers are the U.S. Federal Emergency Management Agency, U.S. Department of Commerce, Public Works and Government Services Canada, Industry Canada, and Canadian Commercial Corporation.

Steering Committee Members

Mr. John Todaro, U.S. Co-Chair
Mrs. Cynthia Gonsalves, OSD
Mr. Luis Garcia-Baco, U.S. Army
Ms. Adrienne Gould, U.S. Navy
COL Craig Kimberlin, U.S. Air Force
Mr. Rod Manzano, U.S. Marine Corps
Mr. Steven Linder, MDA
Mr. John Christensen, DLA
Mr. William Ennis, DCMA
Mr. David Shaffer, U.S. Army

Ms. Evelyn Levine, Canadian Co-Chair
Mr. Michael Slack, DGIIP

Secretariat

The U.S. Army Materiel Systems Analysis Activity is the NATIBO Secretariat. The Secretariat is responsible for all business management functions in support of the NATIBO, including the planning and recording of meetings, the correspondence with and between sub-committees, the maintenance of a central repository of data/files on NATIBO activities, and other business management duties as assigned by the Steering Committee. The Secretariat is also responsible for selected functions in support of the MOU.

Business Development Working Group (BDWG)

The BDWG provides a permanent forum for the exchange of views on the means of utilizing the technology and industrial base to meet defense program objectives, and through this forum identify mutually beneficial cooperative technology and industrial base activities between DoD and DND. The BDWG also will facilitate exploratory discussions and review documentation prepared by proponents for the purpose of establishing a Working Group or PA under the provisions of the MOU. The BDWG will also advocate and increase awareness of all NATIBO sponsored activities.

Calendar Year 2004 Activity

Working Groups Established. The NATIBO MOU has generated considerable interest. The following Working Group was established this calendar year.

- **Army Tactical Communication and Information System Modeling Working Group (ATCISMWG).** The ATCISM WG was established to exchange information regarding the development and use of modeling and simulation tools to support U.S. Army Command, Control, Communications and Computers (C4) planning for coalition deployments and the development of interoperable coalition C4 capabilities. This working group will likely lead to the establishment of a NATIBO PA which will be the vehicle to exchange models and software. The U.S. Project Officer is from the Defense Information Systems Agency and Canada's Project Officer is from the National Defence Headquarters. The TOR for this working group was signed April 23, 2004.

Ongoing Efforts From 2003. The NATIBO MOU was signed in the spring of 2001 and several working groups were established from 2001 through 2003. These working groups continue to work under and support NATIBO MOU objectives.

- **BDWG.** The BDWG had a variety of inquiries from potential users, mostly via phone call, regarding the use of the NATIBO MOU on a broad spectrum of topics. Several projects were not within the scope of the MOU and the BDWG suggested other international agreements or referred proponents to their International Programs Office for guidance.

- **First Responder Technology Working Group (FRTWG).** Phase II of this project is complete. The FRTWG undertook a study to identify and assess the North American manufacturing capabilities, competing technologies, barriers and facilitators associated with migrating military technologies and products which can be used by civilian First Responders. Five technologies were identified as being most mature and useful to the civilian first responders' community. Of these five technologies, two were selected for further consideration: the Remote Casualty Location Assessment Device and the Effervescent Liquid Fine Mist Apparatus. The next iteration of the third technology, the Joint Firefighter Integrated Response Ensemble, is still under development. The "Defense Technology Opportunities for First Responders" report was published in late CY2004.

- **Gas Turbine Engine-Industrial Base Analysis Working Group (GTE-IBAWG).** By focusing on industry's ability to meet current and future military requirements for military helicopters, the GTE-IBAWG study identified problems with parts (reliability issues) and suppliers manufacturing/logistics issues, and also identified future collaborative opportunities. The Small Gas Turbine Engine (GTE) Supply Base Production and Support Study was published in early CY2004. There are no plans to extend the GTE-IBAWG TOR period beyond the June 2004 expiration date.

- **Light Armored Vehicle Working Group (LAVWG).** Although the LAVWG has had no activity in the past year that produced any significant results, the Canadian Department of National Defence LAVWG Project Office is examining the utility of re-invigorating the LAVWG. The LAVWG has had liaison activity with the LAV User Nations Group during CY2004.

- **Medium Logistics Vehicle Replacement Working Group (MLVRWG).** Due to delays in the Canadian Department of National Defence Medium Support Vehicle System (MSVS) project, potential MSVS activities under NATIBO will not likely occur in the near future.

- **Multi-Service Regenerative Electrolyzer Fuel Cell Working Group (MREFWG).** The initial prototype (from 2002) was underwritten by a "Purple Consortium" that includes the U.S. Navy ONR/Crane, U.S. Air Force Warner Robbins AFB, U.S. Marine Corps ONR/Expeditionary Power, U.S. Army RDECOM TARDEC and NASA Glenn. Additionally, the Corp of Engineers Construction Engineering Research Laboratory, joined the MREFWG in CY2004 and has sponsored up to a $1 million package for Modeling & Simulation (M&S) for fuel cells that includes the MREF's regenerative design. By December 23, 2004, the MREFWG had completed negotiations and secured the required U.S./Canada signatures on its three year Project Arrangement under the Defense Development Sharing Project with Canada. The initial Work Directive, for the development and integration of an Auxiliary Power Unit (APU) in support of a Light Armored Vehicle, was placed on contract December 29, 2004. The MREFWG has enjoyed a multiple of Program Executive Office/Project Manager endorsements that included early support from the Project Manager Stryker Brigade Combat Team. Therefore, the Stryker has been selected as the first demonstration platform. The MREF APU is of a modular design and the componentry can be readily broken out into additional platform spaces and purposes such as forklifts, boats/ships and future propulsion venues.

NATIBO Website. During CY2004 over 53,000 users accessed the NATIBO website and approximately 23,094 reports were downloaded. The Bio Detection Systems Technologies Study, the Rechargeable Battery Systems Study, and the Diminishing Manufacturing Sources and Material Shortages reports captured the most interest. The website also has information on how to prepare required documentation when forming a working group or preparing a PA to be implemented under the MOU. Examples are also provided. The TOR and PA downloads are indicative of sufficient interest, although they have not materialized in a comparable number of new agreements. The URL is http://www.dtic.mil/natibo. Updates are made when appropriate.

Steering Committee Meeting. The CY2004 Steering Committee meeting, hosted by the U.S. Army, was held June 8-9, in Orlando, Florida. In addition to the business meeting, attendees toured the U.S. Army Program Executive Office for Simulation, Training, & Instrumentation.

Exhibit. The NATIBO exhibit is displayed at selected forums, conferences and expositions. The exhibit was placed and staffed at the Defense Manufacturing Conference November 29 - December 1. This forum provided an opportunity for approximately 975 leaders from government, industry and academia to exchange perspectives and information about critical DOD technology and sustainment initiatives.

Presentations. Members are frequently invited to make presentations on NATIBO projects to their senior staff or other departments, agencies, activities. In response to calls for papers, submissions are frequently selected for presentation at conferences and symposiums. Some of these events are described below.

- Industrial Base Strategic Planning Meeting, April 19-20, 2004, Arlington, VA, NATIBO briefing, Mrs. Cynthia Gonsalves
- Industrial Base Strategic Planning Meeting, April 19-20 2004, Arlington, VA, Space Technology Industrial Base, Mr. Alan Taylor
- Metal Casting Technology Forum, May 18, 2004, Rock Island, IL, DoD-A Metal Casting Customer with Strategic Needs, Mrs. Cynthia Gonsalves
- CANUS Defense S&T Senior National Representatives Meeting #4, October 6, 2004, Washington, DC, NATIBO briefing, Major Robert Boucher
- Canadian Forces Air Force Liaison Officers, October 7, 2004, Washington, DC, NATIBO briefing, Major Robert Boucher
- Business Development Group and Board of Directors, Defence Research and Development Canada, November 23, 2004, Valcartier, Quebec, Canada, NATIBO briefing, Major Robert Boucher
- PSEPC, November 22, 2004, Ottawa, Canada, First Responders Technology Report, Major Robert Boucher and Messrs Louis Bedard and Scott Derrah
- DND Provost Marshall Representatives, November 23, 2004, Ottawa, Canada, First Responders Technology Report, Major Robert Boucher and Messrs Louis Bedard and Scott Derrah
- Canadian Forces Fire Marshall Representatives, November 24, 2004, Ottawa, Canada, Major Robert Boucher and Messrs Louis Bedard and Scott Derrah
- Defense Manufacturing Conference 2004, December 1, 2004, Las Vegas, NV, NATIBO briefing, Mrs. Cynthia Gonsalves

Awards. Certificates of Appreciation were presented to members of the First Responders Technology Working Group and to the Gas Turbine Engine-IBA Working Group members. The Chairmen's Award of Achievement for Outstanding Performance was presented to Colonel Dan Bulpit for his contributions to NATIBO from 1999-2004. The NATIBO Achievement Award was presented to Evelyn Levine, Canadian Co-Chair and DND Director General, International and Industry Programs, in recognition of her outstanding leadership of the NATIBO from 2001-2004. Ms. Levine retired in December 2004 and was replaced by Mr. Paul Labrosse in January 2005.

Funding

The NATIBO has no direct funding line in U.S. or Canadian defense budget systems. Projects are funded from the operating budget of member organizations. The U.S. Army, U.S. Navy, U.S. Air Force and Canada's Department of National Defence equitably support the NATIBO Secretariat.

The NATIBO functions with 'payment in kind' contributions from its members. The U.S. Army prints and publishes studies and brochures. The U.S. Air Force pays expenses associated with the exhibit. OSD sponsors the website and Canada has provided materiel for the exhibit. All the Services and Canada have had employees staff the exhibit at events.

Planned Activities for Calendar Year 2005

BDWG. The BDWG will continue to work with prospective users of the MOU to ensure that prospective activity is consistent with the objectives of the NATIBO MOU. They will assist users in the preparation and staffing of documentation required for international activity. The BDWG will continue to work closely with the Steering Committee and Co-Chairs regarding the business activity of the NATIBO.

- **Multi-Service Regenerative Electrolyzer Fuel Cell Working Group (MREFWG).** In Phase IV of the project, a Stryker Reconnaissance Vehicle outfitted with a MREF APU will be tested in the Fall of 2005 at Yuma Proving Ground under a series of "Silent Watch' scenarios. The M&S Scope of Work efforts on the initial prototype will result in a variety of utilities from the physics to system platform assessment for the benefit of all contributors. Anticipate this working group will draft and staff a PA for Phase IV in CY2005.

- **First Responder Technology Working Group (FRTWG).** For Phase III, the DoD has established a Technology Transfer Center of Excellence for First Responders at the University of Pittsburgh's Institute for Entrepreneurial Excellence, building on their small business development capabilities. This new Center will work with DND, DoD and civilian first responders in the two countries based on the NATIBO Report results as well as the results of the joint study matching first responders needs and identifying common areas for focus. If no manufacturing capability currently exists for these technologies, the Center will work with companies/new startups to establish a manufacturing capability.

- **US/CA Homeland Defense Working Group (HDWG).** The BDWG initiated action late in CY2004 to establish the US/CA Homeland Defense Working Group (HDWG). The purpose of the HDWG will be to monitor the respective initiatives/projects of the U.S. DoD/HD and DND, identify potential HD-related cooperative projects and conduct bilateral HD-related studies/projects under the NATIBO MOU. In addition, the HDWG will provide the framework for the exchange of information and identify

potential Project Arrangements. The HDWG is expected to stand up in early CY2005.

- **Homeland Defense (HD) Work Plans.** Late in CY2004, the BDWG identified two new work plan studies in the area of HD.

  One of these work plans is entitled, "Potential Areas for DND/DoD Cooperation on Homeland Defense." The purpose of this study will be to identify current cooperative HD initiatives in the fields of acquisition, logistics and technology. The study will identify ongoing or planned projects and programs, identify gaps in current planning and provide recommendations for future cooperative projects and programs.

  The other work plan is entitled, "Military Equipment for First Responders: Benefits and Challenges for DOD and DND Cooperation." The purpose of this study will be to identify North American geographic dispersal of military equipment critical to meet the requirements of First Responders in the event of a national emergency in Canada or the U.S. The study will identify barriers to the distribution and delivery of critical equipment/items in either the U.S. or Canada.

  It is envisioned that these two studies will lay out the framework by which both Defense Departments will achieve true bilateral acquisition and logistics cooperation in the domain of HD for the foreseeable future

Exhibit Schedule. The tentative NATIBO exhibit schedule for CY2005 follows:

December Defense Manufacturing Conference, Orlando, Florida

The BDWG is also exploring possibilities to display the exhibit at a few of the large Service related conferences that are heavily attended by Program Managers.

Conclusion

In an era of declining defense budgets, changing threats to national security, and increasing "equipment geriatrics," the North American technology and industrial base faces the challenges of advancing and maintaining technological superiority with reduced government research and development funding. Meeting these challenges requires the leveraging and promoting of commercial use and investment in technologies which will have both defense and industrial applications. Broadening the technology industrial base to include both US and Canadian resources so that investment costs may be shared across a broader base will better prepare us to face these challenges and improve the affordability of defense systems. The key to the future is rational use of industrial, economic, and technological resources in the U.S. and Canada to achieve the greatest attainable military capability at the lowest cost.